



## ABOUT TSE

Turkish Standards Institution (**TSE**), the sole authorized organization for standardization in Turkey since 1954, operates in diverse fields of the quality infrastructure that includes certification, testing, training as well as surveillance and inspection activities.

### Training Certificates

≈113000\*



TSE is an active member of the world standardization community; with its full membership of International Organization for Standardization (**ISO**) and International Electrotechnical Commission (**IEC**) since 1956, Standards and Metrology Institute for the Islamic Countries (**SMIIC**) since 2010, European Committee for Standardization (**CEN**) and European Committee for Electrotechnical Standardization (**CENELEC**)

since 2012.

TSE, as a standardization body, provides the standards aimed at enabling industrialists to produce goods and services in compliance with rules, laws, codes and standards applicable in global markets, as well as being a notified body, enables clients to gain access into the European and Gulf market by ensuring their products meets all **CE mark** requirements according to European Directives/Regulations and **G mark** requirements according to GSO regulations.

### Certified Companies

>10000



As a leader and respectable Conformity Assessment Body and also with the responsibility of seeking public interest always as a priority, TSE focuses its efforts on providing all kinds of services that industrialists/exporters need in their relations of trade with other countries.

\*Last 5 years

### Product Certificates

≈20000



### Test Reports

>175000\*



## CABLE FIRE TESTING LABORATORY

**Director:** Hilmi AKDOĞAN

**Adress:** TSE Quality Campus

Cumhuriyet Mah. 2258. Sok. No:10, H-Blok

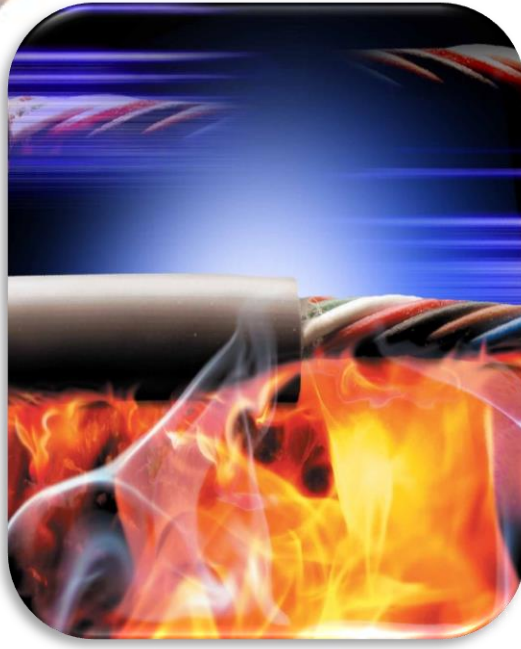
Gebze, Kocaeli/TURKEY

**Tel:** +90 (262) 723 15 07

**Fax:** +90 (262) 723 16 20

**E-mail:** elektrotekniklab@tse.org.tr





## CABLE FIRE TESTING LABORATORY

The safety of cables used in buildings and public area is very significant in terms of the safety of buildings. The fire performances of cables and spreading of the flame from one point to another have important role during the fire. Considering these factors, all type of cables used in buildings were covered by Construction Products Regulation (CPR 305/2011/EU) which was approved in 2013. Also, the classification of cable reaction to fire according to EN 50575 and CE marking will become mandatory in July 2017. This means that all cable manufacturers who intend to sell cables for use in permanent installations in buildings must obtain CE-marking for their products through Notified Bodies and Laboratories.

TSE Gebze Electrotechnical Laboratory has already notified within the scope of Construction Products Regulation and listed in NANDO (New Approach Notified and Designated Organizations) web-site.

TSE Gebze Electrotechnical Laboratory have been accredited by TÜRKAK (Turkish Accreditation Agency) with relevant standards for reaction to fire classification of cable.

**CE**  
**1783**



## REACTION TO FIRE TEST

Reaction to fire is a response of test specimen when it is exposed to fire under specified conditions in a fire test. EN 50575 specifies reaction to fire performance requirements, test and assessment methods for electric cables used for the supply of electricity and for control and communication purposes, which are intended for the use in construction works and subject to performance requirements on reaction to fire. Table gives the reference to the European Standard containing the test methods to be used for the corresponding reaction to fire class.

Class	Test methods				
	EN ISO 1716	EN 50399 <sup>a</sup>	EN 60332-1-2	EN 61034-2 <sup>c</sup>	EN 60754-2 <sup>c,d</sup>
A <sub>ca</sub>	X	-	-	-	-
B1 <sub>ca</sub>	-	X <sup>b</sup>	X	X	X
B2 <sub>ca</sub>	-	X	X	X	X
C <sub>ca</sub>	-	X	X	X	X
D <sub>ca</sub>	-	X	X	X	X
E <sub>ca</sub>	-	-	X	-	-
F <sub>ca</sub>	No performance determined				
<sup>a</sup> EN 50399 contains all the information previously referred to as FIPEC <sub>20</sub> Scenario 1 and FIPEC <sub>20</sub> Scenario 2. <sup>b</sup> Special conditions of test apply in EN 50399 to Class B1 <sub>ca</sub> . <sup>c</sup> Additional classification tests. <sup>d</sup> EN 60754-2 contains all the information previously contained in EN 50267-2-3.					

### EN 50399 Common Test Methods For Cables Under Fire Conditions - Heat Release and Smoke Production Measurement on Cables During Flame Spread Test



Developed from EN 60332-10, it is the most common used fire test, for cables. Measured parameters are;

- \*Flame Spread (FS)
- \*Heat Release Rate(HRR)
- \*Total Heat Release (THR)
- \*Fire Index Growth Rate (FIGRA)
- \*Smoke Production(SPR)
- \*Total Smoke Production (TSP)





---

**EN 60332-1-2: Tests on Electric and Optical Fibre Cables under Fire Conditions- Test for Vertical Flame Propagation for a Single Insulated Wire or Cable**

This test evaluates the flame spread of a single cable, while being exposed to a small flame. The measured parameter H, is the charred length of cable.

---



---

**EN 61034-2: Measurement of Smoke Density of Cables Burning Under Defined Conditions**

This test evaluates the potential contribution of a cable to obscuration of vision while burning under static air conditions.

---

---

**EN 60754-2: Test on Gases Evolved during Combustion of Materials from Cables Determination of Acidity (by pH Measurement) and Conductivity**

The test measures the conductivity and pH, through evaluating the potential contribution of burning cable materials, producing acidic gases.

---



## RESISTANCE TO FIRE TEST

The cables of system which have to continue to operate during fire such as fire-protection water system, fire escape stairs, compression system, smoke control system and firefighters lift should be fire-resistant.

Resistance to fire test describes how long a cable continues to operate in a fire.



---

**IEC 60331-21:** Tests for Electric Cables under Fire Conditions-Circuit Integrity

---

---

### EN 50200: Method of Test for Resistance to Fire of Unprotected Small Cables for Use in Emergency Circuits

This test determines how long a cable continues to operate in a fire with impact.

---

